



How to prevent project failure

By Patrick Hynds

Executive Summary

- Too many development projects fail (no matter which stats you reference)
- Methodologies help, but don't assure success
- Skill counts, but you should manage luck out of the equation
- There are ways to ensure success or quick and dignified (read survivable) failure
- Everyone needs to be vested in success

A hand is visible on the left side of the slide, pointing towards the blueprints. The blueprints are partially visible at the bottom left corner, showing technical drawings and text.

In the Pages that Follow

- A few words about my background
- An overview of the desired outcome
- The role of technology in producing the desired outcome
- A few details about staying out of trouble including warning signs
- Summary and Rules to live by

A close-up photograph of a person's hand pointing with their index finger towards a set of blueprints. The hand is positioned on the left side of the frame, and the blueprints are spread out on a surface below it. The background of the slide is a light blue gradient.

About Patrick Hynds

This is important so you understand where this advice comes from...

- West Point graduate and Infantry Platoon Leader in First Gulf War
- Designed, built and served as product manager for commercial products
- Experienced in security projects and audits
- Extensive consulting experience (both IT and dev) including work with some of the largest organizations in the world
- Hoping to help you avoid some of the scars I have received over the years...

Desired outcome

- You and your stake holders desire to:
 - Get some problem solved by means of having an application built or something implemented
 - Get the problem solved for the least amount of money possible
 - Get the problem solved as soon as possible
 - Thwart terrorists and other criminals in their attempts to disrupt your business and lives of all people who depend on your business
 - Secure critical information through both software and policy best practices

Frequent Challenges

- The spec is loose or non-existent
- No off the shelf solution exists to meet the requirements
- Only world class resources can do the job
- Performance must be maintained over time or enhanced
 - performance expectations never go down they only go up
- There is no single owner who can make a decision



Fixed Bid vs. Time and Materials

- Even internal projects must determine if the project is Fixed Bid or T&M
- Fixed Bid means there is a spec for exactly what is to be built
- T&M means that there is not a sufficient spec for the project
- Many failures are the result of a project being carried out as Fixed Bid without a sufficient spec

Types of specifications

- I have an idea...
 - Run or verify they have a really hefty bank account
- High Level Requirements Document
 - Reads like a wish list
 - No details and many unanswered questions
- Detailed Requirements Document
 - Lets techies go away and write Functional and Technical Specifications
- Functional Specification
 - Includes detailed mock-ups for application UI
 - Includes Use Cases
 - Might allow a Fixed Bid project
- Technical Specification
 - The blueprint for the application
 - No unanswered questions
 - Allows a Fixed Bid project

A close-up photograph of a person's hand pointing with their index finger at a set of architectural blueprints. The blueprints are spread out on a surface, and the hand is positioned on the left side of the frame, pointing towards the right. The background is a light blue gradient.

Picking the right technology

Considerations before picking a technology:

- Providing integration of existing components
- Creating elements of the solution as necessary
- Providing a durable solution
- All goals of the project can be met in a reasonable (and acceptable) timeline
- Offers flexibility to expand beyond the original goals as circumstances dictate
- Do not let anyone pick a technology because it is cool unless it is the Owner and they understand the risks

Status, status, status

- Everyone is answerable and so everyone must submit a status to someone
- Establish a process and format for status and make it an unbreakable law
- Challenge status submitted to you early and often (no BS allowed)
- Status reports are the documentation that shows who botched the project if it fails, but that includes the responses to unreasonable status reports

Optional Additions...

- The following are often considered nice to have:
 - Usability
 - Logging
 - Reporting
 - Error Handling
 - Scalability
 - Maintainability
 - Security
 - Documentation
- In reality you must determine how much of each is really required for success

Project timeline estimates

- Pattern Matching
 - If you have done something like this before then you use that project as a template to evaluate the time needed
 - Take into account resource differences including quality
- Function Point Analysis
 - Count up the things that must be done and estimate each of them
 - Break everything down until it is easy to estimate

Motivating the team

The staff needed to realize your desired outcome includes:

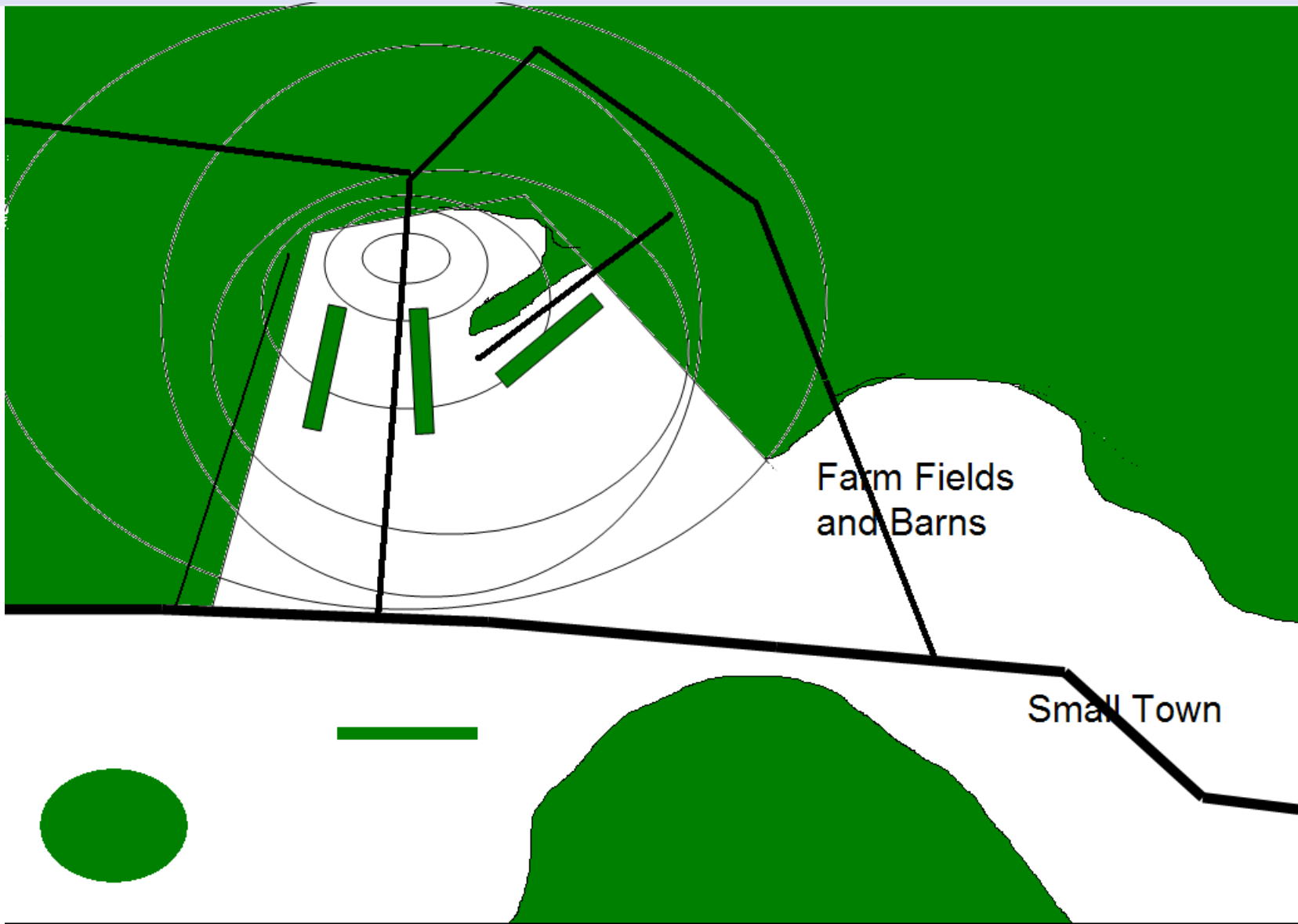
- Project Owner
 - Must be a single human decision maker
 - Must control the budget or have a firm budget
 - Must be responsive
- Project Manager
 - Person who must make sure it all happens and also must set Owner expectations constantly
- Developer
 - Most likely person to kill you with well intentioned extras
 - The chief source of both problems and solutions
- QA
 - Must not be the developer. If none available Project Manager or Owner must do the job

War story about team motivation

Situation:

- Platoon ARTEP in Germany (1990)
- Defend a hilltop against a reinforced mech. infantry company
 - 13 Bradley Fighting Vehicles
 - 4 M1 Abrams Tanks
 - 4 Improved TOW Vehicles
 - About 30 dismounted infantry

War story map



Farm Fields
and Barns

Small Town



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War story about team motivation

Preferred Solution

- VICTORY
- Attacking units destroyed
 - 9/19 Bradley Fighting Vehicles (BFVs) Destroyed
 - 3 surviving BFVs trapped
 - 4 M1 Abrams Tanks Destroyed
 - 4 Improved TOW Vehicles Destroyed
 - About 30 dismounted infantry Killed (twice)

A hand is visible on the left side of the slide, pointing towards the text. The hand is resting on a map or document with some handwritten notes and diagrams. The background of the slide is light blue.

War story about team motivation

Common Outcome

- DEFEAT and DEATH
- Defending units destroyed
 - 4/4 Bradley Fighting Vehicles (BFVs) Destroyed
 - All enemy vehicles survived
 - All enemy dismounted infantry survived
 - Objective lost and overrun

Leadership

- You manage money and resource, but you must lead people
- Everyone can spot a hypocrite so follow your own rules
- Morale is a big factor in the chances for project success
- Easter Eggs and Bullets

Rules to live by

- Status
 - Be paranoid early
 - Check status constantly
- Never guess
 - aka Never assume
- Don't be wishful
 - It still is not done when the coding is done
- No spec, no estimate
 - Opportunity cost is real, so understand it
- Other things to remember
 - Shipping is a feature
 - Support often costs more than development
- Repeat

Conclusion

- This stuff is harder than most people think
- It is not enough to be talented with the technology
- If your customer thinks the project failed then it failed
- Winning the lawsuit or being right, but still being fired means you still lose
- Leadership is harder to find than bright technical talent